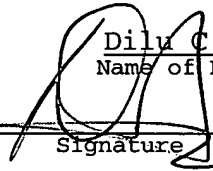
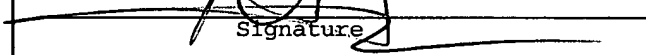


IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor: Mehta et al.

Title: SPACE TIME TRANSMIT DIVERSITY WITH SUBGROUP RATE
CONTROL AND SUBGROUP ANTENNA SELECTION IN MULTI-INPUT MULTI-
OUTPUT COMMUNICATIONS SYSTEMS

EXPRESS MAIL mailing label number: <u>EV 102066648 US</u> Date of Deposit: <u>4/21/04</u>
I hereby certify that this correspondence is being deposited with the United States Postal Service as EXPRESS MAIL in an envelope addressed to: The Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450, on:
<div style="text-align: center;"> <u>Dily C. Zhang</u> Name of Depositor</div> <div style="text-align: center;"> Signature</div>

* * *

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Pursuant to 37 C.F.R. §1.56(a), Applicant hereby cites the
following documents (copies enclosed) listed on the attached copy
of Form PTO-1449.

This Information Disclosure Statement is filed in accordance with the paragraph of 37 CFR §1.97 checked below:

X 1.97(b) This Information Disclosure Statement is filed:

- (1) Within three months of the filing date of a national application; OR
- (2) Within three months of the date of entry of the national stage of an international application; OR
- (3) Before the mailing of a first Office Action on the merits.

No fee or certification is required.

 1.97(c) This Information Disclosure Statement is filed after the period specified in paragraph (b) above, but before the mailing date of either:

- (1) A Final Action under 37 CFR 1.113; OR
- (2) A Notice of Allowance under 37 CFR 1.311;

AND is accompanied by either:
(check one)

_____ the Certification under 37 CFR
1.97(e) as set out below; OR

_____ the fee of \$240.00 under 37 CFR
1.17(p).

___ 1.97(d) This Information Disclosure Statement is filed
after the mailing date of either:

- (1) a Final action under 37 CFR 1.113; OR
- (2) A Notice of Allowance under 37 CFR 1.311;

BUT before payment of the Issue Fee, AND is accompanied
by:

- (1) the Certification under 37 CFR 1.97(e) as
set out below; AND
- (2) Petition is hereby made under 37 CFR
1.97(d) for consideration of this
Information Disclosure Statement; AND,
- (3) Authorization to charge the petition fee
of \$130.00 as set out in 37 CFR 1.17(i).

If this Information Disclosure Statement is being filed
under 37 CFR 1.97(c) or 1.97(d), the undersigned Attorney hereby

certifies that:

— each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing date of this Statement;

or

— no item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, or to the knowledge of the undersigned Attorney after making reasonable enquiry, was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing date of this Statement.

MERL-1563

Authorization is hereby given to charge the indicated fee(s)
to Deposit Account No. 50-0749.

Please charge any additional fee due for this paper to
Deposit Account No. 50-0749.

Respectfully submitted,

MITSUBISHI ELECTRIC RESEARCH LABORATORIES

By: 

Andrew J. Curtin
Reg. No. 48,485
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Cambridge, Massachusetts 02139
(617) 621-7539

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Enclosures

Form PTO-1449 (modified 2/91)	U.S. DEPT OF COMMERCE Patent and Trademark Office	Attorney Docket Number: MERL-1563	Serial Number:
INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)		Applicant: Mehta et al.	
		Filing date: Herewith	Group art area:

U.S. PATENT DOCUMENTS

Exam- iner Initial	Patent number	Date	Name	Class	Subclass	Filing date if appropriate
	10/209,306	July 31, 2002	Horng et al.			

FOREIGN PATENT DOCUMENTS

	Document number	Date	Country	Class	Subclass	Translation	
						YES	NO

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

1.	Foschini et al., "On Limits of Wireless Communications in a Fading Environment when Using Multiple Antennas," Wireless Pers. Commun., pp. 311-335, 1998.		
2.	Wolniansky et al., "V-BLAST: An Architecture for Realizing Very High Data Rates Over the Rich-Scattering Wireless Channel," ISSSE, pp. 295-299, 1998.		
3.	Sellathurai egt al., "TURBO-BLAST for Wireless Communications: Theory and Experiments," IEEE Trans. Commun., vol. 50, no. 10, pp. 2538-2546, Oct. 2002.		
4.	Tarokh et al., "Space Time Codes for High Data Rate Wireless Communication," IEEE Trans. Inform. Theory, vol. 44, pp. 744-765, 1999.		
5.	Alamouti, "A simple transmit diversity technique for wireless communications," IEEE J. Selected Areas in Commun., vol. 16, Oct., pp. 1451-1458, 1998.		
6.	Zheng and Tse, "Diversity and Multiplexing: A Fundamental Tradeoff in Multiple-Antenna Channels," IEEE Transactions on Information Theory, Vol. 49, No. 5, pp. 1073-1096, May 2003.		
<table border="1"> <tr> <td>Examiner:</td> <td>Date Considered:</td> </tr> </table>		Examiner:	Date Considered:
Examiner:	Date Considered:		
EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP .609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.			